



BSc Minors in English

Wageningen University

Overview BSc Minors for Exchange Students

All minors presented on this information sheet are taught in **English**.

For more information please surf to: www.wageningenuniversity.nl/minors

For contact details or to apply, please surf to: www.wu.nl/exchange

First semester

- Agricultural Business Management
- Climate Change, Mitigation and Adaptation Strategies for Society
- Concepts in Crop Production
- Consumer Behaviour
- Earth and Health
- Environmental Policy and Management
- Experimental Plant Sciences
- Food Technology
- Food, Intestinal Homeostasis and Disease
- Foods of Animal Origin
- Freedom from Hunger
- Gender Aspects of Sustainable Food Systems
- Geo-information for Environment and Society
- Healthy Ageing in Humans and Model Species
- Innovation and Entrepreneurship
- International Land and Water Management (English possible)
- Microbes Inside
- Plant Biotechnology
- Quality of Fresh Plant Products in Supply Chains
- Supply Chain Management
- Systems Biology
- Urban Environmental Management

Second Semester

- Biobased Technology
- Biodiversity: from Micro to Macro and from Cause to Consequence
- Biotechnology
- Disaster and Recovery
- Ecology and Biological Control of Insects
- Economics and Policy
- Environmental Education
- Food Safety
- Marine Living Resources
- Plant Breeding
- Sustainable Agriculture and Consumption
- Systems in Plant Production
- Tourism, Conservation and Development
- Wildlife Biodiversity

FIRST SEMESTER (Sept.-Jan.)



Agricultural Business Management

Deals with business economics, management and marketing in agriculture.

- Economics of Agribusiness
- Decision Science 1
- Agricultural Business Economics
- Management and Marketing
- Advanced Management and Marketing



Climate Change - Mitigation and Adaptation Strategies for Society

Gain a broad basis of knowledge needed in order to deal with climate change issues.

- Introduction to Global Change
- Principles of CC Economics and Policy
- Principles of Earth and Ecosystem Science
- Sustainability Transitions
- System Earth
- Environmental Systems Analysis
- Adaptation to Climate Change (CC)
- Adaptation to CC in Developing Countries



Concepts in Crop Production

Food security, depletion of natural resources and need for economically viable, sustainable and socially acceptable cropping and farming systems.

- Physiology and Development of Plants in Horticulture
- Quantitative Aspects of Crop Production
- Concepts in Environmental Plant Physiology
- Systems Analysis, Simulation and Systems Management
- Quantitative Analysis of Land use Systems



Consumer Behaviour

A broad introduction to consumer behaviour and focus on the way in which consumers adopt and use products and services that are brought to the market by a production chain.

- Principles of Consumer Studies
- Consumer and Technology
- Gender, Culture, Consumers and Markets
- Lifestyles and Consumption



Earth and Health

Study the linkages between the environment (geology, soil, water), the food we eat (plants, animal products), the way this food co-determines human health (nutrition, health effects) and trade aspects (global flow of nutrients and food products).

- Economics of Agribusiness
- Food Components and Health
- Linking Earth to Health
- Soil-Plant Relations



Environmental Policy and Management

Focus on the social and economic causes of environmental problems and the social, economic and communicative methods and policy instruments for solving them.

- Environmental Management and Industry
- Principles of Climate Change Economics and Policy
- Environmental Policy: Analysis and Eval.
- Environmental Communication and Innov.



Experimental Plant Sciences

Focuses on the improvement of the quality of plant production and plant products for various purposes including health-related, pharmaceutical and industrial use.

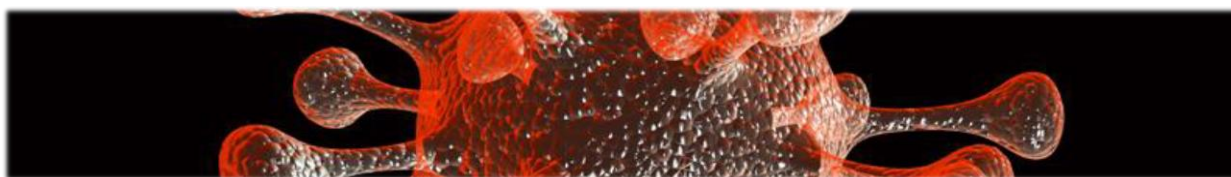
- Genomics
- Plant Plasticity and Adaptation
- Ecophysiology
- Plant Biotechnology
- Molecular Aspects of Bio-interactions
- Cell Biology and Advanced Imaging Techn.



Food Technology

Aspects of food microbiology, food chemistry, food physics and food process engineering play a central role during food production.

- Mathematical Concepts for Food Technology
- Food Microbiology
- Food Chemistry
- Process Engineering
- Food Related Allergies and Intolerances
- Food Physics



Food, Intestinal Homeostasis and Disease

Focuses on a better comprehension of the interplay between host (gut) immunity, infectious organisms, microbiota and nutrition to maintain intestinal homeostasis and prevent chronic inflammatory conditions.

- Basics of Infectious Diseases
- Food Components and Health
- Food Related Allergies and Intolerances
- Cell Biology and Health
- Pharmacology and Nutrition



Foods of Animal Origin

Focuses on topics that are important in producing products of animal origin. The production of meat- and milk products and the important issues during the production processes are discussed.

- Food Quality Management
- Meat Science
- Milk in the Dairy Chain
- Food Related Allergies and Intolerances
- Principles of Animal Nutrition



Freedom from Hunger

Understand the interplay between global and local factors in producing hunger and to design human rights-based responses to food crises.

- Food Crises: the big picture
- Law and Public Power
- Humanitarian Aid and Reconstruction
- Global Food Security
- Food, Nutrition and Human Rights



Gender Aspects of Sustainable Food Systems

Approach changes and pressing issues around food systems from an integrated bio-physical, economic, political, social and cultural perspective.

- Rural Gender Studies
- Food Heritage and History: Food, Gender and Cultural Heritage Governance
- Global Food Security
- Gender and Natural Resources



Geo-information for Environment and Society

The combined use of earth observation techniques (Remote Sensing) and Geographic Information Systems (GIS) for problem solving within the environmental and social disciplines is an asset of the Wageningen approach.

- Introduction Geo-information Science
- Geo-information for Society
- Remote Sensing
- Geo-Information Tools
- GIS BSc research project



Healthy Ageing in Humans and Model Species

Focus on the role of nutrition and physical exercise for healthy ageing in humans and pet animals.

- Fundamentals of Genetics and Molecular Biology
- Concepts and Theories of Healthy Ageing
- Communication & Persuasion
- Interventions for Healthy Ageing in Humans and Model Species
- Pharmacology and Nutrition



Innovation and Entrepreneurship

Focuses on the value of knowledge, innovation and entrepreneurship in life sciences, environmental sciences and agriculture.

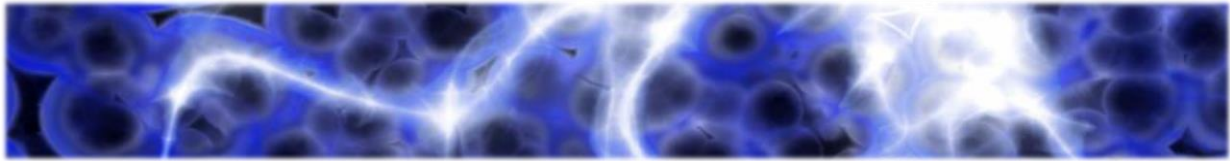
- Principles of Entrepreneurship
- Management and Marketing
- Economics of Science and Technology
- Financial and Business Management
- Agricultural Business Economics
- Innovation Management and Cross Disciplinary Design



International Land and Water Management (English possible)

Introduction to the field of International Land and Water Management.

- Irrigation & Water Management
- Degradation and Soil & Water Conservation
- Global Food Security
- Introduction Geo-information Science
- Adaptation to Climate Change in Developing Countries



Microbes Inside

Challenging examples of how the omnipresent nature and function of microbes, including bacteria, archaea and fungi, affects our life. We are colonized since birth by complex microbial communities (also known as our microbiome) that are important for health and disease.

- Microbial Ecology
- Immunomodulation by Food and Feed
- Microbial Disease Mechanisms
- Research Methods Microbiology
- Microbes Inside



Plant Biotechnology

Covers all relevant topics in this academic field. Building on general BSc-level knowledge on cell biology, genetics, plant physiology and molecular biology.

- Fundamentals of Plant Breeding, Plant Pathology and Entomology
- Genetic Analysis, Tools and Concepts (GATC)
- Plant Biotechnology
- Genomics
- Plants and Health



Quality of Fresh Plant Products in Supply Chains

Understand the basis of post-harvest deterioration, quality control and quality improvement.

- Food Quality Management
- Sensory Science I: Principles of Sensory Science
- Product Quality and Post-Harvest Physiology
- Microbiology & Biochemistry
- Food Quality Analysis and Judgement



Supply Chain Management

Aims at a theoretical basis of and introduction to multidisciplinary analysis of food supply chains.

- Financial and Business Management
- Decision Science
- Supply Chain Management
- Management and Marketing



Systems Biology

Studies in an integrated, quantitative manner the mechanisms by which cellular components, cell organisms and communities interact in space and time.

- Bio-Information Technology
- Introduction to Systems and Synthetic Biology
- Systems Analysis, Simulation and Systems Managm.
- Introduction to Functional Genomics
- Molecular Systems Biology: From Omics to integrative Bioinformatics

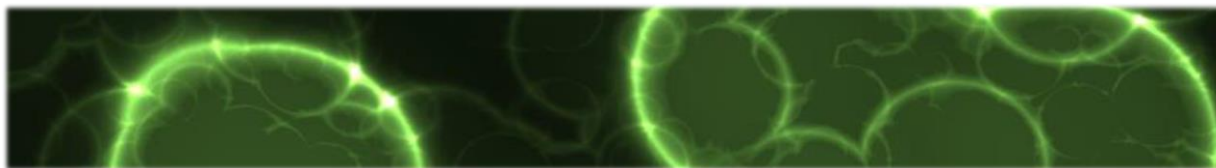


Urban Environmental Management

Core disciplines (Technology, Policy, Land Use Planning) and issues of Urban Environmental Management to BSc students of various disciplines from within and outside Wageningen University.

- Environmental Management and Industry
- Principles of Urban Environmental Management
- Basic Technologies for Urban Environmental Management
- Sustainability Transitions: Concepts, Issues and Indicators
- Planning for Urban Quality of Life

SECOND SEMESTER (Febr.-Jun.)



Biobased Technology

Focuses on technical strategies and development to replace fossils by bio-mass. Attention is given to a number of renewable resource applications.

- Renewable Energy: Sources, Technology & Applications
- Biobased Economy (New Course)
- Biorefinery
- Renewable Res. and Production of Indust.Chem.



Biodiversity: from Micro to Macro and from Cause to Consequence

Underlying concepts and theories are taught of population and evolutionary ecology.

- Population and Systems Ecology
- Molecular and Evolutionary Ecology
- Ecology of Commun., Ecosys. and Landscapes
- Functional Biodiversity
- Plant, Vegetation and Systems Ecology



Biotechnology

Biotechnology is defined as the industrial exploitation of living organisms or exploitation of components derived from these organisms.

- Cell Physiology and Genetics
- Enzymology
- Environmental Process Engineering
- Bio Organic Chemistry
- Gene Technology
- Bioreactor Design
- Mathematics for Time-dependent Systems
- Physical Transport Phenomena



Disaster and Recovery

Conceptual tools and professional competencies to develop an effective and responsible engagement with recovery processes.

- Natural Hazards and Disasters
- Innovation Management and Cross-Disciplinary Design
- Institutions, Recovery and Resilience
- Disaster-proof Planning and Preparedness



Ecology and Biological Control of Insects

Focus on the application of ecological knowledge to durable management of insect pests.

- Insect Ecology
- Molecular and Evolutionary Ecology
- Biological Control of Insects
- Behavioural Ecology
- Insect-Plant Interactions



Economics and Policy

Focuses on economics and economic policy analysis relating to typical Wageningen issues, such as food, environment and rural development.

- Agriculture, Food and Policy
- Environmental Economics & Policy
- Microeconomics
- Economics and Governance



Environmental Education

Pays special attention to the possibilities and constraints the digital age provides for such teaching, communication and learning.

- Didactic Skills
- Sustainable Development
- Life-Science Comm. and Learning in the Dig.Age
- Applied Env. Education and Communication



Food Safety

Become acquainted with the basic aspects of food safety.

- Risk Communication
- Basics in Food Technology
- Quality of Animal Products
- Food Hazards
- Quality Systems Operations
- Food Properties and Function



Marine Living Resources

Focuses on the use and management of living resources in aquatic ecosystems with a particular focus on coastal zones, seas and oceans.

- Sustainability in Fish and Seafood Production
- Aquaculture and Fisheries
- Ocean and Coastal Governance
- Introduction Marine and Estuarine Ecology
- Marine Life
- Practical Aquatic Ecology and Water Quality



Plant Breeding

Introduces students to the field of plant breeding with a focus on breeding for resistance and quality in major food, feed and ornamental crops.

- Plant Breeding: Basic Concepts and their Applications
- Plant Diseases and Immunity: Basic Concepts and their Applications
- Breeding for Quality and Resistance
- Modern Statistics for the Life Sciences
- Plant Cell and Tissue Culture
- Genetic Analysis, Tools, Concepts (GATC)



Sustainable Agriculture and Consumption

Touches upon all aspects of organic production and sustainability: agro-ecological, social and economic.

- Globalization and Sust. of Food Production and Consump.
- Sustainable Marketing
- Organic Agriculture and Society
- Agrobiodiversity/Organic Animal Production
- Conservation Agriculture



Systems in Plant Production

Students will become familiar with the methods, tools and techniques that are essential to develop systems thinking.

- Crop Ecology
- Analysing Sustainability of Farming Systems
- Agrobiodiversity
- Conservation Agriculture



Tourism, Conservation and Development

Combines tourism, international development and nature conservation with socio-spatial and policy analyses.

- Introduction Leisure, Tourism and Environment
- Governance for Forest, Nature Biodiversity
- Natural Res. Governance in a Complex World
- Designing Innovative Policy Arrangements
- Development of Sustainable Tourism



Wildlife Biodiversity

Understanding of the relation between genetic variation and ecology of life histories, from individuals, populations, and species to communities.

- Life History Evolution
- Resource Ecology
- Wildlife Conservation Genetics
- Population and Quantitative Genetics
- Animal Ecology

Overview other BSc Minors

These minors are taught **partly in English**.

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To apply, please surf to: www.wu.nl/exchange

First Semester

- Animal Sciences
- Biology of Infections Diseases of Humans and Animals
- Communication for Change
- Development and Policies in a Globalizing World
- Earth and Biosphere
- Economics of Sustainable Development
- Education (Fully DUTCH)
- Landscape Architecture and Planning
- Management of Terrestrial Ecosystems
- Nutrition and Health
- Policies, People and Nature Conservation
- Psychobiology of Eating Behaviour
- Sociology for Life Science Students

Second semester

- Animal Production and Health
- Communication, Research and Practice
- Education (Fully DUTCH)
- Food Products and Processing
- Forest and Nature Conservation
- Health and Society
- Living Earth
- Policy and Governance for the Life Sciences
- Regional Development and Planning



Publication date September 2013.
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